



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,836	09/17/2003	Thomas Boland	CXU-349	5781
22827	7590	10/28/2004		
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			EXAMINER EICKHOLT, EUGENE H	
			ART UNIT	PAPER NUMBER
			2854	

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,836

Applicant(s)

BOLAND ET AL.

Examiner

Eugene H Eickholt

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-35 and 54-74 is/are allowed.
- 6) ☒ Claim(s) 36,37,39 and 41-47 is/are rejected.
- 7) ☒ Claim(s) 38,40 and 48-53 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1-15-04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

No antecedent basis is present for "said substrate".

Claims 36-37, 39, 41-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Warren et al (US 2003/0100824).

Paragraph no. 63 discusses precise 3D in vivo direct deposition of cells....using miniaturized dispensing nozzle deposition system to "add" cells that "grow". This reads on the claim 36 "array of viable cells" and the nozzle on the claimed "orifice". See paragraph no. 223 concerning orifice 106. Paragraph No. 323 discloses "conventional inkjet dispensing technology,.....may be utilized in the HAT design for dispensing material constituents". This reads on the supplying of cells to an ink jet printer step of claim 36. Paragraph no. 324 discloses depositing cells on a hydrogel surface. This reads on the depositing of a support compound including a gel step of claim 36 and the hydrogel polymers of claim 43.

Paragraph no. 324 teaches the crosslinking step of claim 39 as the hydrogel is already on the slide (substrate) when photo-cross linking occurs.

Paragraph 277 teaches the dispenser can dispense "hydrogel" which reads on the claim 41 printing step and the claim 43 use of a hydrogel step. The paragraph also teaches co-mixing of stem cells with hydrogel which reads on the claim 42 mixing step.

Paragraph No. 295 teaches deposition of a monolayer of cells which reads on the 2-D deposition step of claim 44.

Paragraph no. 4 refers to the goal in tissue engineering of mimicking the 3D ordering of cells with paragraph no. 226 teaching control of the cell dispenser in three dimensions which anticipates the 3D cell step of claim 45. See also paragraph no. 369 concerning 3D ETC's.

Paragraph no. 278, last sentence indicates multiple dispensers writing at the same time which anticipates the multiple droplets of claim 46.

Paragraph no. 446 refers to optimized growth kinetics which reads on the cell fusing step of claim 47.

Claims 38, 40 and 48-53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

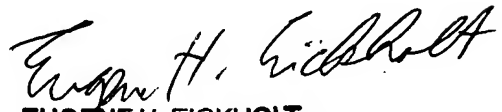
Claims 1-35 and 54-74 stand allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A shortened statutory period of 3 months is set to respond.

Eickholt/ds

10/14/04


EUGENE H. EICKHOLT
EUGENE H. EICKHOLT
PRIMARY EXAMINER

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning the specifics of this communication should be directed to Examiner Eickholt, who can be reached Tuesday through Thursday. Inquiries of a general nature should be directed to the TC2800 receptionist.

Contact numbers:

Exr. Eugene H. Eickholt
SPE Andrew Hirshfeld
TC 2800 Fax

571-2722160
571-2722168
703-8729306

Eugene H. Eickholt
EUGENE H. EICKHOLT
PRIMARY EXAMINER